

(R) were defined as patients with improvement of one or more NYHA functional class, with a significant improvement in quality of life and without episode nor hospitalization for heart failure during follow-up.

**Results:** 34% of the patients constitute the non-responder group (NR). No difference between R and NR was observed in LVEF, QRS width, NYHA, cardiovascular risk factors nor drug medication. Non-ischaemic dilated cardiomyopathy was significantly more present in R (71% vs 27%;  $p=0.03$ ). Before CRT, NR had more important left ventricular end-diastolic diameter, left ventricular end-systolic diameter and more elevated left pressures. Atrioventricular dyssynchrony was significantly more observed in R (66% vs 9%;  $p=0.006$ ) so as intraventricular dyssynchrony (95% vs 27%;  $p=0.001$ ). BNP is significantly more elevated in NR ( $602 \pm 385$  vs  $320 \pm 361$ ;  $p=0.03$ ) before CRT. After 3 and 6 month, a significant decrease in left ventricular end-diastolic and end-systolic diameters, LVEF and normalisation of left and right pressures occur in R. Likewise, BNP levels were lower in R.

**Conclusions:** NR patients have before implantation a more severe cardiomyopathy. At follow-up, left ventricular remodelling could only be observed in R patients. These data suggest that cardiac CRT should not be proposed too late so that left ventricular remodelling could be expected.

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### Reversal mechanical remodeling is associated with reversal of electrical remodeling and reduction in appropriate therapy in patients with cardiac resynchronization implanted defibrillators

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**Background:** Cardiac Resynchronization Therapy (CRT) is associated with reverse left ventricular (LV) remodeling. However, the effects of CRT induced mechanical remodeling on electrical remodeling, and the occurrence of ventricular arrhythmias has not been clearly established.

**Objectives:** We studied the relationship between mechanical remodeling, electrical remodeling and the occurrence of appropriate implantable cardioverter defibrillator (ICD) therapy one year after CRT.

**Methods:** We analyzed data from 45 patients who underwent ICD-CRT implantation at our center. Patients had New York Heart Association (NYHA) functional class III or IV heart failure symptoms, left ventricular ejection fraction (LVEF) 35%, and QRS duration 120 ms or QRS  $<120$ ms with left intraventricular dyssynchrony. Significant LV reverse remodeling was defined by a minimum 10% decrease in the LV end diastolic diameter (LVEDd) at one year of follow-up. Electrocardiographic indices of dispersion of repolarization (DR) (QTc, Tpeak-Tend (Tp-e) and their dispersion) were measured immediately and one year post-CRT implantation. The occurrence of appropriate ICD therapy was noted for each patient.

**Results:** Patients with ( $n=21$ ) and without ( $n=24$ ) significant LV reverse remodeling had similar baseline characteristics. At one year of follow-up, patients with reverse LV remodeling exhibited both a significant decrease in DR parameters and a lower rate of ICD therapy ( $p=0.0025$ ).

**Conclusion:** Reverse LV mechanical remodeling is associated with reversal of electrical remodeling and a lower rate of appropriate ICD therapy following CRT.

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### Ablation of premature ventricular beats in post-ischemic intractable electrical storm

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**Introduction:** post-ischemic electrical storm (PIES) occurring shortly after the acute phase of myocardial infarction (MI) is a rare but potentially lethal phenomenon. Clinical and therapeutic options are poorly known.

**Methods:** 14 pts (12 men,  $61 \pm 13$  years old) underwent RF ablation for intractable PIES. PIES occurred  $10 \pm 5$  days after MI (4 months in one pt). Mean EF was  $28 \pm 7$  %. Fast monomorphic VT (10 pts), FV (8 pts) or torsades de pointes (5 pts) recurred in each pt despite maximal anti-arrhythmic therapy (mean  $22 \pm 13$  episodes). MI was inaugural anterior MI in each but 3 pts (sub-endocardial in 2, inferior in 1), with one vessel disease (left descending artery) in 8 pts (2 or 3 vessels in 6). When performed (4 pts), new PTCA did not control PIES. RF ablation was performed as a last chance solution, targeting ventricular premature beats arising from the left septal Purkinje network (in all patients the arrhythmia was of Purkinje origin, defined by a sharp spike Purkinje-potential preceding ventricular activation during sinus rhythm as well as during arrhythmia).

**Results:** Abolition of Purkinje potentials and of Purkinje premature beats led to resumption of electrical storm in 12/14 pts with 1 procedure (2 in one pt). The two pts with unsuccessful RF ablation died within a few hours from intractable heart failure and recurring arrhythmias. All other pts were implanted with an ICD (two pts had already been implanted before). During a  $18 \pm 19$  months follow-up, 3 pts present with recurring isolated VT episodes found in ICD memories. Seven pts died from cardiac or non cardiac causes ( $7 \pm 10$  months).

**Conclusions:** PIES is a rare but potentially lethal event occurring mainly in inaugural large anterior acute MI. RF ablation of initiating Purkinje-premature beats may be an efficient therapeutic solution despite the poor long-term prognosis of such patients.

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### Late outcome of radio-frequency ablation for monomorphic sustained ventricular tachycardia in patients with underlying heart disease without implantation of a defibrillator

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**Introduction:** Monomorphic sustained ventricular tachycardia (MSVT) in structural heart disease (SHD) carries poor prognosis and usually needs ICD implantation. Whether successful RF ablation of VT in this setting could avoid the need of ICD implantation is largely unknown.

**Methods:** 105 successive with SHD (88 men, age  $64 \pm 16$ ) were followed after RF ablation of MSVT. An ICD was not implanted either because of end stage extra cardiac pathology, advanced age or well-tolerated MSVT and preserved EF. 33 % were on amiodarone and 51 % on beta-blockers.

**Results:** 128 procedures were performed (1,2/pt) in 4 centers. Coronary artery disease was present in 54%, right ventricular dysplasia in 10 %, dilated cardiomyopathy in 10 % and various SHD in 26 %. Mean EF was  $48 \pm 12$  % ( $14$  % with  $EF \leq 0.35$ ). VT was well tolerated in 77 % ( $169 \pm 32$  bpm) with syncope or near-syncope in 23 %. 11 % presented with electrical storm. Ablation was performed using various techniques and end points. Complete acute success was considered achieved in 80 % and undetermined in 5 pts. Not any VT was induced in 92 % at the end of the procedure. Complications were arterial dissection/occlusion (2 pts), tamponnade (1 pt), AV block (1 pt) and hematomas (4 pts). Patients were discharged on beta-blockers (63%) and amiodarone (29%). Mean follow-up was  $21 \pm 16$  months. VT recurred in 14 % ( $7 \pm 5$  months) without compromise of the vital status. Mortality rate was 11 % (no SD) ( $16 \pm 15$  months). Additional RF ablations were performed again in 14 pts with recurring VT and VT further recurred in 4 while SD occurred in 2. Final VT recurrence rate including redo procedures was 14 %. An ICD was finally implanted in 5 pts. There was no difference in VT recurrence rate according to the cardiopathy, clinical variables, EF, VT rate and tolerance or to residual VT inducibility.